

## Today's Topics:

Builder's Success - HF Sweep Tube Amp  
CoCo WEFAX  
Kenwood TS140  
Modifiying radios for out of band operation  
rec.radio.shortwave "invite"  
RST (2 msgs)

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Date: 14 Dec 89 23:14:41 GMT

From: hpfcso!hpfcdc!perry@hplabs.hp.com (Perry Scott)

Subject: Builder's Success - HF Sweep Tube Amp

Message-ID: <7880099@hpfcdc.HP.COM>

I've been pestering the net for the past few months about a Rube Goldberg HF linear amp I've been building from a buncha 6LQ6s. I finally got it working well enough to report the results.

Much of this will be familiar to the OFs, but many of us younger OFs weren't around during the sweep tube period in the 60s and 70s. I had quite a bit of trouble finding information on them, and had to rely on friend's old QSTs, ca 1969-1970.

Sweep tubes are interesting beasties to work with. They have a relatively high plate capacitance, low plate voltage (I used 800 V), dissipate 30W continuously, or 300W for 10 seconds. For this reason, they make good SSB amplifiers. Another advantage is that you can usually find someone trying to get rid of these dinosaurs - I got some for \$4.95.

I found the DeMaw articles (QST 1969, 1970), and used his biasing arrangement to balance the currents in six sweep tubes. I used a bias voltage of -20V, and then used 10K pots to set the individual grid voltages to somewhere around 14 volts. The grids (control, screen, and suppressor) were RF grounded through a .01uF disc ceramic.

The input circuit was merely capacitively coupled to the cathode. I put in a 1 ohm resistor and RF choke in the cathode circuit to meter the plate current. I may add a real tuned input circuit in the future, but my old Kenwood TS520 is able to resonate the input circuit, so it is not a priority.

The output circuit was a conventional pi, with  $R_p = 450$  ohms. This was determined with the standard equation -  $R_p = V_p / (I_p * K)$  - right out of the ARRL Handbook. At this low  $R_p$  value (>2K is the norm), the tune and load variable capacitors become quite large, adding to the cost.

I made the mistake of using a disc ceramic in parallel with C-tune for the 80 meter band, and promptly burned two of them (let the smoke out in electronics parlance). The small disc ceramics cannot handle the current. I've given up on 80 meters until I can find a doorknob-type capacitor. I used commonly available silver-mica in parallel with C-load, which seem to be tolerating the current so far. I have gotten 40 and 20 meters to work, while 10 and 15 are elusive, probably due to the high plate capacitance of the six tubes in parallel.

I'm running the amplifier slightly into the class C region, and am getting 60-65% efficiency out of it. The loaded tank Q is around 12, and total output power is over 400 watts (my RF meter scale only goes up to 300 :-)) with about 80 watts drive. So far, most of my testing has been limited to a dummy load, since I am unsure how to measure harmonic power and how the FCC expects us poor hams to comply with their 40dB (is that right ?) harmonics floor.

Next on the agenda is a trio of 4CX250Bs. I've found a cheap (free) source of used tubes that still have some life in them. We'll see if I can hit the 1500W legal limit with those. After balancing 6 sweep tubes, a trio of real transmitting tubes should be a piece of cake.

Thanks to the Net for all the help. It's always nice to know we still have the capability to build useful equipment out of baling wire and bubble gum.

Perry Scott  
KF0CA

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Date: 16 Dec 89 01:50:38 GMT  
From: unsvax!arrakis.nevada.edu!storkus@uunet.uu.net (Mike Storke N7MSD)  
Subject: CoCo WEFAX  
Message-ID: <1124@unsvax.NEVADA.EDU>

Ok, since so many people are having mail bounce problems, and even though I don't want to waste net bandwidth, I'm going to post the UNENCODED program to this news and also to REC.RADIO.SHORTWAVE. As I am leaving for home tomorrow, and will not return until mid-January, I think this is necessary.

The file will be in unencoded ascii code. All you have to do is remove headers and the like. I will post it later tonight.

I'm sorry for any inconvenience this will cause to the network, but it is necessary. The WEFAX program is NOT long, and will only consume as much room as a typically long message (or a couple of the messages from these stupid threads we're seeing). 73's, Mike, N7MSD (Sig file will be in program message)

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Date: 16 Dec 89 00:43:40 GMT  
From: rochester!rit!ultb!cep4478@louie.udel.edu (C.E. Piggott)  
Subject: Kenwood TS140  
Message-ID: <1771@ultb.isc.rit.edu>

>I am considering purchasing a Kenwood TS140. I would like to receive  
>opinions of the rig from people who have them. TU es 73's

I like the 440 more. The \$500 difference for a TS440S (with the built in antenna tuner) is worth it, if only for direct frequency entry keypad and SWR meter. The only thing that I wish they BOTH had is a built-in electronic keying unit. I like a station with as few separates as possible, for when I want to go portable, and it'd be nice to just be able to plug in a decent set of paddles, with the electronic keyer part built inside. (It's not even listed as an option in the TS440S or TS140S ads, and there's no controls for it on the panel).

The ICOM IC-745 has this as an optional internal add-on board. The 745 is a great rig, except no QSK (only semi-breakin) and it's 100 watts (Kenwoods are 200w), and a TS-140 looks like a better deal than an IC-735 (ours is a 745, no longer made).

Don't forget about the Yaesu 747, it looks pretty neat for the price, except that the panel layout is not as high-tech and pretty as it could be.

De Chris, N2JGW  
R.I.T. Amateur Radio Club  
cep4478@ultb.isc.rit.edu

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Date: 12 Dec 89 23:16:27 GMT  
From: zaphod.mps.ohio-state.edu!usc!henry.jpl.nasa.gov!elroy.jpl.nasa.gov!  
peregrine!ccicpg!cci632!rit!ultb!cep4478@tut.cis.ohio-state.edu (C.E. Piggott)  
Subject: Modifiying radios for out of band operation  
Message-ID: <1742@ultb.isc.rit.edu>

In article <31140@iuvax.cs.indiana.edu> amirza@silver.bacs.indiana.edu (anmar mirza) writes:

>Also, where is it a LAW that I cannot transmit out of bands on my radio?

I disagree with you, and feel that the type-certifications are important. Even if I look at it from strictly a ham-radio point of view, to tell you the truth I have some serious reservations about the number of EMT's etc. who are out there with IC-02AT's and the like who are \*NOT\* hams.

>Last I looked, it was merely a regulation through the FCC, not a LAW.

But you bring up an interesting question: part 97 doesn't make any mention of penalties for infractions, except with regard to loss of your license for failure to answer an official notice of violation. Is this stuff, in fact, written somewhere? And for that matter, if it's 'law', do normal constitutional rights apply, or do we waive them when we sign the 610 form? (Like Driver's licenses) (Can we ask for a jury trial? :-) )

>I also seem to remember something about certain regulations that are  
>suspended during emergencies, I highly doubt that I would get cited  
>for using my radio in good faith out of band during an emergency,

I think that's quite a stretch. Even during emergencies, normal rules are only waived when other communications links fail. For the same reason, if your car breaks down in front of a telephone booth, what do you think would be the appropriate LEGAL response, to use the autopatch, or to get out of the car and use the payphone? The answer is quite clear; if the FCC thought that emergency services were an exception because they respond to emergencies, I think that they wouldn't be required to be type-certified in the first place.

(Is anybody's still reading?)

Chris N2JGW  
cep4478@ulb.rit.edu (pls. include a return path)

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Date: 15 Dec 89 09:27:27 GMT  
From: philmtl!philabs!ttidca!sorgatz@uunet.uu.net ( Avatar)  
Subject: rec.radio.shortwave "invite"  
Message-ID: <8495@ttidca.TTI.COM>

In article <6894@shlump.nac.dec.com> s\_dowman@leaf.enet.dec.com (Steve Dowman) writes:

+In article <8460@ttidca.TTI.COM>, sorgatz@ttidca.TTI.COM ( Avatar) writes...  
+ (mindless drive on swl'ers being dweebs and anti-Ham)  
+  
+ Hey Avatar, how are we gonna kiss your ass if you keep talking through  
+ it? Sheesh, who are you anyway, The Incredible Iron Ham Man? Your  
+ attitude is amusing. This Ham is cooked!

Mr. Dowman,

Your choice of language and the tone of your posting simply proves my point about this issue. I doubt that you understand the significance of the conflict on .shortwave: The chap who lost the round, claims to be an officer for the American SWL clubs or some suchlike. Now wouldn't you think that a person so involved would have a better background on radio law and history?!!

His ignorance about such matters is compounded by the fact that he seems unable to admit, in public, that he is in error regarding the facts. Does this extend to you as well? I never called YOU a dweeb...be a little more careful what you sling, eh? ;-)

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-Avatar-> (aka: Erik K. Sorgatz) KB6LUY          +-----+
Citicorp(+)TTI          *-----> panic trap; type = N+1 *
3100 Ocean Park Blvd. Santa Monica, CA 90405      +-----+
{csun,philabs,psivax,pyramid,quad1,rdlvax,retix}!ttidca!sorgatz **
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Date: 13 Dec 89 22:53:08 GMT  
From: zaphod.mps.ohio-state.edu!usc!henry.jpl.nasa.gov!elroy.jpl.nasa.gov!  
peregrine!ccicpg!ccci632!rit!ultb!cep4478@tut.cis.ohio-state.edu (C.E. Piggott)  
Subject: RST  
Message-ID: <1751@ultb.isc.rit.edu>

In article <3187@faraday.ptolemy.arc.nasa.gov> fariss@ptolemy.arc.nasa.gov (Gary B. Fariss) writes:

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>N3xxx: "KH6xxx 59 Pennsylvania."  
>KH6xxx: "You're 59 Hawaii. QSL?"  
>N3xxx: "QSL. Thanks for Hawaii! How's my signal out there?"
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> :-)

Our first contact during the contest was given a (quite honest) 55 signal report. After two more QSO's we caught on that everyone was giving out 59's, hearing something like this:

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"You are 59 colorado 59 colorado"  
"Thank you, you are 59 new york, 59 new york, please repeat your call  
  prefix, we couldn't make it out, you're very weak, VERY weak!"
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The awful part is that, for the remaining 35 hours 45 minutes of operating, we were feeling guilty about giving the guy the 55!

Did any other university clubs out there participate in the conest?  
We finaled 23 states and 32 dxcc countries, total about 29,000 pts.

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Chris, N2JGW  
R.I.T. Amateur Radio Club, K2GXT

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Date: 16 Dec 89 01:05:02 GMT  
From: rochester!rit!ultb!cep4478@louie.udel.edu (C.E. Piggott)  
Subject: RST  
Message-ID: <1772@ultb.isc.rit.edu>

In article <790@larry.sal.wisc.edu> sde@larry.sal.wisc.edu.UUCP (Scott Ellington)  
writes:

>Speaking of call signs, shouldn't stations be required to give their own  
>call at least once per contact?

YEAH!!!!!!!!!!!!!!!!!!!!!!!!!!!!

BOY is it AGGRAVATING to listen to some bonehead call "QRZ?" and then  
repeat the calling station's callsign, say "THANK YOU FOR xyz, QRZ?"  
and give his own callsign every 10 minutes or so!!!

- (1) It's not fair to me, as a contest participant, to have to wait  
for you to give your callsign sometime in the next 8 or 9  
minutes. I spend this time waiting to hear who you are,  
when I could be out contesting. You would \*THINK\* that the  
big guns who are calling CQ on some freq. would show a  
little more courtesy in this respect.
- (2) The law states at least every ten minutes during and at the end  
of EACH COMMUNICATION. This means when you're DONE talking  
to ME, you give your callsign, \*NOT\* in 10 or 15 exchanges,  
after EVERY ONE. I don't think that there's any room  
here for interpretation.

This is the way \*I\* operated, and it didn't hurt at all.

Chris, N2JGW

cep4478@ultb.isc.rit.edu

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End of INFO-HAMS Digest V89 Issue #1026

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